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# YELLOWS



# RESISTANT



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*Read the very interesting  
history of the development  
of this remarkable seed*

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**Wisconsin Cabbage Seed Co.**  
INCORPORATED

**RACINE, WISCONSIN**





*Trial plot on Yellows-sick soil at Racine, Wis. To the left and right are various Resistant strains surviving. Note center two check rows of commercial strains gone out with the "Yellows."*

## The Story of Yellows Resistant Cabbage Saving of an Industry

IN the years immediately following 1900, crop failures became more and more frequent in the cabbage growing sections of the middle West. Even on land where the crop had been grown only a relatively few times, growers were puzzled by the

fact that the plants turned Yellow, leaves dropped off at the stem and plants died in large numbers. This occurred even when careful rotation of cabbage with other crops was practiced. Once this diseased condition appeared there seemed to be no effective





*Cabbage field of commercial strain along North Shore R. R. at Racine, Wis., almost completely gone out with the "Yellows."*

*The same field a year later planted with Yellows Resistant cabbage. Note full stand, large size plants, even though worms did puncture outside plant leaves early in season. The bee-hive in center contains thermometer registering temperature of soil night and day.*



cure or prevention by rotation, seed or soil treatment, and the only course left to pursue was to abandon such fields as "Cabbage sick."

By 1910 this disease known as **YELLOW**S, sometimes called "Wilt" had increased to an alarming extent. The cabbage growing sections of Northern Ohio and Illinois were likewise badly affected, and Kraut Manufacturers realized that they must find a solution or move their factories elsewhere. The same

was true in the intensive cabbage growing area of Southeastern Wisconsin.

In 1910 this difficulty fortunately came to the attention of Prof. L. R. Jones, Plant Pathologist at the University of Wisconsin, coming to Madison just the year previous from the University of Vermont. After intensive investigation and experimentation, he very soon recognized the fact that the only way of controlling this disease was to develop Disease Re-





## MARION MARKET

The MARION MARKET was originally bred up from Copenhagen Market, but differs from the latter in several respects. It takes about ten days longer to mature than the early strains of Copenhagen and produces a much larger plant. The heads are practically round, very hardy and stand shipment well. The quality throughout is excellent, and a favorite for early Kraut. It is very highly resistant to the Yellows and we have seen this variety yield as high as 26 tons per acre.



## GLOBE

An excellent mid-season, round head cabbage, selected from the Glory of Enkhuizen; very uniform. It is a few days later in maturing than the Marion Market, but is inclined to produce somewhat heavier head. An outstanding feature of this variety is the unusually short core.

sistant strains. His method is told in very interesting and instructive form in his Research Bulletin No. 38 from the Wisconsin Experiment Station, entitled "Control of Cabbage Yellows through Disease Resistance."

Prof. Jones noticed in these badly diseased fields that there were always a few sound healthy plants remaining. He applied the theory "Survival of the fittest" of Darwin's study of natural selection. Would these few surviving plants produce their like? He





## WISCONSIN ALL SEASONS

Selected from All Seasons. Type similar to the old variety and the season about the same. It is the hardiest of all the flat-head varieties, an excellent Kraut cabbage. WISCONSIN ALL SEASON is known to stand unfavorable conditions of drought and hot weather unusually well. For this reason it is a very choice variety for the home garden for late summer and early fall use. It does not burst as readily as other varieties after heading up.

determined this by growing such plants to seed and planting their progenies right back on the sickest soil he could find. He discovered that a large percentage of the next generation did survive. Then by a program of continual selection and retrial on sick



## WISCONSIN HOLLANDER

This is the first variety developed by Prof. L. R. Jones. It is a selection from Danish Ballhead, an excellent storage cabbage. It differs from the Danish Ballhead in being about ten days longer in season, the plants are larger and yield heavier under favorable conditions. The heads are inclined to flatten slightly as they mature.

soil, he finally secured a strain of cabbage which practically produced a full crop. In this program it was necessary to apply proper seed growing methods to the end that each succeeding generation would be not alone Yellows Resistant but would produce





## JERSEY QUEEN

This is the latest production of the Wisconsin Experiment Station and U. S. Department of Agriculture. The JERSEY QUEEN is the earliest Yellows Resistant cabbage as yet introduced. It possesses all the qualities and characteristics of the best strains of Early Jersey Wakefield, with the addition of being highly Resistant to the Yellows disease. This strain is hardy and uniform in type. Where Jersey Wakefield is used and Yellows is at all likely to be encountered, the JERSEY QUEEN should be used instead.



## RED HOLLANDER

Yellows Resistant

This is the only Yellows Resistant Red Cabbage yet introduced. It is like the ordinary Hollander in having a round head. The color of the head is dark red throughout, excellent for main crop and good for winter storage.



cabbage of the proper uniform type and acceptable yields.

In 1916 the cabbage growers of Southeastern Wisconsin were beginning to use the first new strain which Dr. Jones named "Wisconsin Hollander" and they have continued to grow it ever since. For a considerable number of years previous to 1916 many growers in the Racine and Kenosha sections had been compelled to discontinue growing cabbage altogether. Go into this region today and you will find it growing as much cabbage as it ever did due to this marvelous advance in plant science.





*Selected heads carried over in cold storage set out in spring for stock seed production.*

*Harvesting a 5-acre field of cabbage seed.*



## Other Varieties Developed

Certain sections in other States, Eastern, Central and Southern, were just as badly hit. Resistant strains other than the Danish type were badly needed. The problem became a national one. In 1918 the U. S. Dept. of Agriculture joined with the Wisconsin Experiment Station to broaden this breeding-program to include the needs of the country as a whole. From

1919 to 1928 the National Kraut Packers' Association extended considerable financial assistance to aid in the production of Disease Resistant Kraut varieties.

In 1922, the "Wisconsin All Seasons" was first introduced in wide use. Up to the present time this variety has become a permanent and important factor in the Kraut industry of the Yellows infested areas. Next appeared such mid-season varieties as the "Marion Market" and "Globe." Even a Resist-





*Ten acre field of GLOBE on Yellows sick soil in Illinois. Note heavy yield, large, round, uniform heads.*

ant "Red Hollander" was developed. The most recent introduction is a Resistant selection from the Jersey Wakefield known as "Jersey Queen."

### **Continual Selection Necessary**

One of the points emphasized by Prof. Jones and his co-workers, especially Dr. J. C. Walker, is the importance of constant selection in these strains in order to keep them up to a high degree of resistance. There is always the danger that the strain will revert to type unless constant selection and development of new stock seed on sick soil is properly practiced. In

second generation stock there is always a certain percentage of susceptible plants and these must be repeatedly eliminated to keep the strain from reverting to non-resistance. To do this it is necessary to keep up the selection of plants for stock seed from planting made each year on thoroughly sick soil.

While the YELLOWS disease is the most destructive and the most prevalent of all the diseases that attack the cabbage family, it should not be confused with other forms of disease such as Club Root, Black Leg and Black Rot. No claim is made that the Yellows Resistant strains are less susceptible to these other forms of disease.









# The Wisconsin Cabbage Seed Co.

## of Racine, Wisconsin

### *Specializes in* **YELLOWS RESISTANT VARIETIES**

**T**HE demand for Yellows Resistant cabbage seed is now nation-wide, for reports and investigations show that this disease extends from Coast to Coast. It has been found that no amount of crop rotation, seed or soil treatment, will eradicate this disease. It spreads very rapidly in cabbage growing sections including home-garden plots.

For reasons stated above, it is somebody's job to keep these varieties in highly resistant form and make them available to the trade. For this purpose the WISCONSIN CABBAGE SEED COMPANY was organized, with headquarters in the heart of the Yellows area of *Racine County, Wisconsin*. Here this Company keeps up a program of selection for resistance and trueness to type with continued improvements, and aims to bring forth for the trade the best stocks of Yellows Resistant cabbage that are available. The work is carried on in close touch with the cabbage disease experts of the Wisconsin Experiment Station, so as to take advantage of any new facts that come out which have a bearing on this subject. We feel that we are admirably situated to give the best possible service to the trade in the maintenance of Yellows Resistant cabbage stocks and their increase.

Our breeding and trial grounds, operated on highly diseased soils, are always under the supervision of experts and no strain of seed is multiplied and offered to the trade unless first sanctioned by the Wisconsin Experiment Station.

	LESS THAN 25 LBS.	25 LBS. TO 100 LBS.	100 LB. BAGS
Marion Market	2 45	2 25	2 05
Improved Globe	3 10	2 85	2 60
Wis. All Seasons	1 60	1 50	1 40
Wis. Hollander	1 60	1 50	1 40
Jersey Queen	1 65	1 50	1 25
Red Hollander	3 60	3 35	3 10
Allhead Select	3 10	2 85	2 60